

ABSTRACT

A semiconductor device comprises a high-breakdown-voltage regulator (11) configured to operate at a high input voltage (V1); a reference voltage generating circuit structured as a low-breakdown-voltage component and configured to receive an output voltage from the high-breakdown-voltage regulator to generate a reference voltage VREF2; a differential amplifier circuit (M5) structured as a low-breakdown-voltage component and configured to receive the output voltage from the high-breakdown-voltage regulator and the reference voltage from the reference voltage generating circuit to produce a drive voltage; an output driver (M6) structured as a high-breakdown-voltage component and configured to operate based on the drive voltage; and resistors (R3 and R4) connected in series to the output driver to divide an output voltage of the output driver and feed the divided voltage back to the differential amplifier circuit.